Chapter 3: C++ Decisions

Contents

Time required: 120 minutes

Read: Think C++

- Chapter 4 Conditionals and Recursion

Do: Online Tutorials

Go to https://www.w3schools.com/cpp/default.asp

Tutorial 1: Room Area

Create, compile, run and attach the following program.

```cpp
/**
* Filename: room_area.cpp
* Written by:  William Loring
* Written on:   09-12-2021
* Revised:
* Calculate square feet of a room
*/

#include <iostream>
using namespace std;

int main()
{
    // TODO: Declarations
    // Declare and initialize constants and variables
    int BIG_ROOM{1000};
    int roomWidth{0};
    int roomLength{0};
    int squareFeet{0};

    // TODO: Input
    // Get width and length of the room from the user
    cout << "Enter the width of the room in feet: ";
    cin >> roomWidth;

    cout << "Enter the length of the room in feet: ";
    cin >> roomLength;

    // TODO: Calculate
    // Calculate square feet of the room
    squareFeet = roomWidth * roomLength;

    // TODO: Output
    // Display results to user
    if (squareFeet > BIG_ROOM)
    {
        cout << squareFeet << " square feet is a big room." << endl;
    }
    else
    {
        cout << squareFeet << " square feet is a normal size room." << endl;
    }
    return 0;
}
```

Online Tutorial

Go through the following tutorials.

- C++ Conditions
- C++ if, if…else and Nested if…else

Tutorial 2: Ticket to Prize

Create, compile, run and attach the following program.

```cpp
/**
* Filename: TicketToPrize.cpp
* Written by:
* Written on:
* Revised:
* Calculate prize based on number of tickets
*/
#include <iostream>
using namespace std;

int main()
{
    // Constants for prize levels
    const int FIVE_TICKETS{5};
    const int TEN_TICKETS{10};
    const int FIFTY_TICKETS{50};
    // How many tickets does the user have
    int tickets;
    // Prompt the user and get the number of tickets.
    cout << "How many tickets do you wish to purchase [5, 10, 50]: ";
    cin >> tickets;

    // Determine and display the prize based on the number of tickets
    if (tickets == FIVE_TICKETS)
    {
        cout << "Not enough tickets - keep trying!";
    }
    // Second condition
    else if (tickets == TEN_TICKETS)
    {
        cout << "You win a slinky! Congratulations!";
    }
    // Third condition
    else if (tickets == FIFTY_TICKETS)
    {
        cout << "You win a vacuum cleaner! Congratulations!";
    }
    // The user chose a different number than they were prompted for
    else
    {
        cout << "Apparently you can't follow directions, you lose.";
    }
    return 0;
}
```

Assignment Submission

1. Attach the pseudocode.
2. Attach the program files.
3. Attach screenshots showing the successful operation of the program.
1. Submit in Blackboard.